We claim:

1. A method of fabricating a spatial light modulator, comprising:
forming cavities in a first side of a first substrate;
fabricating electrodes on a first side of a second substrate;
bonding the first side of the first substrate to the first side of the second substrate; and
forming hinges, connectors, and mirror plates on a second side of the first substrate after bonding the first side of the first substrate to the first side of the second substrate.

2. The method of claim 1, wherein the first substrate is a single continuous piece of a material.

3. The method of claim 2, wherein the first substrate is single crystal silicon.

4. The method of claim 1, further comprising depositing a reflective layer on the second side of the first substrate prior to forming hinges, connectors, and mirror plates on the second side of the first substrate.

5. The method of claim 1, further comprising, prior to bonding the first side of the first substrate to the first side of the second substrate, fabricating addressing and control circuitry on the first side of the second substrate.

6. A method of fabricating a plurality of mirrors for a spatial light modulator, comprising:
generating a first mask defining areas to be etched from a first side of a first substrate;
removing material in the areas on the first side of the first substrate defined by the first mask;
thinning a second side of the first substrate to a predetermined thickness;
creating a reflective surface on the second side of the first substrate;

generating a second mask defining areas to be etched from the second side of the first substrate; and

removing material in the areas on the second side of the first substrate defined by the second mask to form a plurality of hinges and mirror plates.

7. The method of claim 6, wherein the material is removed in the areas of the first substrate defined by the first mask to form a plurality of cavities in the first side of the first substrate.

8. The method of claim 6, wherein removing material in the areas of the first substrate defined by the first and second masks comprises etching the first substrate.

9. The method of claim 6, wherein removing material in the area of the first substrate defined by the first mask comprises performing an anisotropic reactive ion etch with SF6, HBr, and oxygen gases flowing.

10. The method of claim 6, wherein thinning the second side of the first substrate comprises a process selected from the group consisting of mechanical grinding, wet etching, and plasma etching.

11. The method of claim 6, wherein creating a reflective surface on the second side of the first substrate comprises polishing the second side of the first substrate after thinning the second side of the first substrate.

12. The method of claim 6, wherein creating a reflective surface on the second side of the first substrate comprises depositing a thin film of reflective material on the second side of the first substrate after thinning the second side of the first substrate.

13. A method of fabricating a spatial light modulator including an array of a plurality of mirrors, comprising:

generating a first mask defining areas to be etched from a first side of a first substrate;

etching the areas on the first side of the first substrate defined by the first mask to form a plurality of cavities in the first side of the first substrate;

fabricating electrodes on a first side of a second substrate;

bonding the first side of the first substrate to the first side of the second substrate;

creating a reflective surface on the second side of the first substrate;

generating a second mask defining areas to be etched from the second side of the first substrate; and

etching the areas on the second side of the first substrate defined by the second mask to form a plurality of hinges and mirror plates.

14. The method of claim 13, wherein etching the areas on the first side of the first substrate defined by the first mask to form a plurality of cavities in the first side of the first substrate comprises performing an anisotropic reactive ion etch with SF6, HBr, and oxygen gases flowing.

15. The method of claim 13, further comprising, prior to fabricating electrodes on the first side of the second substrate, fabricating control circuitry on the first side of the second substrate.

16. The method of claim 15, wherein fabricating control circuitry on the first side of the second substrate comprises fabricating a memory buffer, a display controller and a pulse width modulation array.

17. The method of claim 15, wherein fabricating electrodes on the first side of the second substrate comprises:

covering the fabricated control circuitry with a passivation layer;

depositing a metallization layer on the passivation layer;

patterning the metallization layer in a pattern that will define the electrodes; and

etching the metallization layer to leave behind the material that makes up the electrodes.

18. The method of claim 13, further comprising, prior to bonding the first side of the first substrate to the first side of the second substrate, aligning the first substrate with the second substrate so that the electrodes on the second substrate are positioned to control the deflection of mirrors in the first substrate when the first and second substrates are bonded together.

19. The method of claim 18, wherein aligning the first substrate with the second substrate comprises aligning a pattern on the first substrate with a pattern on the second substrate.

20. The method of claim 13, wherein bonding the first side of the first substrate to the first side of the second substrate comprises using a low temperature bonding method performed at less than approximately 500 degrees Celsius.